

REMARKS

Very thanks for Examination's suggestion and thanks for finding some citations about the present invention, thereby, the applicant may know more information about the invention. This case has been carefully reviewed and analyzed in view of the office action. All details of the reference prior arts are fully considered and compared with the present invention.

Responsive to the objections and rejections made of the Examiner in office action. We have amended the specification, claims and abstracts. All the errors disclosed in that office action has been corrected according to the Examiner's indications disclosed in the official action.

Indeed the citations disclose some features of the present invention, and the applicant agrees with these viewpoints, however applicant discovers that some main features of the present invention is not disclosed in the citation which can form the novelty and inventive step of the present invention.

To illustrate the novelty of the present invention and overcome the objection from the citations, the applicant decides to cancel Claims 1 to 3, without prejudice or disclaimer of the subject matter thereof, and add new claims 4 and 5. The added new claim 4 is based on the original claim 1 and Figs. 3 and 5 of the present invention. Claim 5 has the feature same as the original claim 3. Thereby, it is assured that the new claims are based on the original claim and drawing and thus no new matter is added. The relation of the new claims with respect to the original claims are shown in the following.

Claim 4. (New claim)~~1.~~ A water ~~we~~-proof ball structure comprising:

a ball core;

at least two water ~~we~~-proof elastic bags enclosing the ball core; each water ~~we~~-proof elastic bag having at least one opening, the openings of the at least two water ~~we~~-proof elastic bags being not overlapped; and

a cover enclosing the at least two water ~~we~~-proof elastic bags;

a yarn layer 90 enclosing the two water-proof elastic bag 70;

and

a cover 80 enclosing the yarn layer 90; the cover being made of two sheets; each sheet having a shape like "8".

~~2. The water ~~we~~ proof ball structure as claimed in claim 1, wherein each water ~~we~~ proof elastic bag is made of two sheet, each sheet has a shape like "8".~~

Claim 5. (New claim)~~3.~~ The water ~~we~~-proof ball structure as claimed in claim ~~4~~1, wherein if the water ~~we~~-proof elastic bag does not enclose the ball core, the volume of each water ~~we~~-proof elastic bag is smaller than that of the ball core.

(A) For the citation USP 4,815,747

The feature of the new claim 4 is that the ball has the following core, which is illustrated in Fig. 4.

"a ball core;

at least two water -proof elastic bags enclosing the ball core; each water -proof elastic bag having at least one opening, the openings of the at least two water -proof elastic bags being not overlapped; and

a cover enclosing the at least two water -proof elastic bags;

a yarn layer 90 enclosing the two water-proof elastic bag; and
a cover 80 enclosing the yarn layer 90; the cover being made of two sheets; each sheet having a shape like "8".

The citation '747 had the following layers:

“ a ball core

a plurality of cloth pieces 10, 12

a bag 14 has one opening;

an yarn layer 22

a thread 26

two cover layre 30, 32 having shape like "8".

(1) The apparent difference of the present invention from the citation '747 is that the present invention has two bags 70, but the citation '747 has only one bag. In the present invention, "each water -proof elastic bag having at least one opening, the openings of the at least two water-proof elastic bags being not overlapped;" Thus the ball has the water-proof effect, but the citation '747 as only one bag with one opening, thus the ball of the citation cannot achieve the water-proof effect by the design of the bag.

(2) The present invention has no cloth pieces (10, 12 in citation) and a thread (26 in citation). The present invention has a simpler structure than the citation '747 so as to have a lower cost.

(B) For the citation USP 5,294,112

The citation '5294'112 is used to balls of solid structure, such as soccerball or volleyball, which need to be inflated with air, and thus the balls discussed in the citation '112 is different from the use of the present invention. The present invention is related to basketballs or softballs which do not need to be inflated with air.

In the citation each bag 11, 12, . . . , 16 has three openings (including a small opening for air tap 22). Thereby the structure of the bag of the citation '112 is different form the bag of the present invention.

The present invention has only two bags, each bag has one opening. Since smaller bags of the bags of the citation 112 are overlapped for insertion of the air tap 22. However this will make water being permeated into the balls. Thereby the citation '112 does not say that the bag is made of water-proof elastic bag and thus it is not water-proof. From the specification, the citation '112 does not disclose that the ball made of the citation '112 is aimed to have the water-proof effect.

Thus the citation has no effect of water-proof and the structure illustrated in the citation is not like the present invention. From these viewpoints, it is apparent that the citation '112 does not disclose the bag structure as that in the present invention.

Furthermore, other structure such as yarn layer 90 and cover 80 does not seen in the citation.

Thus, it is assured that the structure of the citation '112 is completely different from the present invention.

(C) For the combination of the citation USP 4,815,747 and USP 5,294,112

From above discussion, it is apparent that the two citations, '747 and '112 has the structure of the two bags as the new claim 4 of the present

invention. Thereby the combination of the two citations cannot make a ball like that of the present invention. Thus, it cannot form a preferred water proof effect.

Thereby the present invention is novel as compared with the citation.

(D) RESULT

Since in above discussion, it is apparent that no prior art has the features of the present invention, especially in new claim 4. Furthermore, as we know that no other prior art has features of the present invention. Thus, the present invention is novel and inventive.

If there is any error in the specification, or claims, applicant requests and authorizes Examiner to amend the claims, specification and drawings of the present invention so that they can match the requirement of U. S. Patent. Attentions of Examiner to this matter are greatly appreciated.

It is now believed that the subject Patent Application has been placed in condition for allowance, and such action is respectively requested.

Respectfully submitted.

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“MARK-UP” COPY OF THE AMENDED SPECIFICATION

WATER~~WET~~-PROOF BALL STRUCTURE

Field of the Invention

The present invention relates to a water ~~wet~~-proof ball structure, wherein the manufacturing efficiency is increased and cost is reduced. Moreover, once after the ball core is manufactured, the wet-proof elastic bags can enclose the ball core immediately. Thereby, in other manufacturing process, the ball core will not be wetted.

Background of the Invention

With reference to Fig. 1, the game-used ball core 10 of a basket ball is made by winding a plurality of woolen yarns or other yarn which can absorb water. A water ~~wet~~-proof elastic layer 20 encloses the ball core 10 so as to prevent the ball core 10 from wetting. Then a cover 30 encloses the water ~~wet~~-proof elastic layer 20 so as to form a complete basketball. To fix the cover 30 to the water ~~wet~~-proof elastic layer 20, a yarn layer 40 is installed between the water ~~wet~~-proof elastic layer 20 and the cover 30.

With reference to Fig. 2, currently, the water ~~wet~~-proof elastic layer 20 is mainly made of rubber. Then a mold 50 is used to heat and vulcanize the water ~~wet~~-proof elastic layer 20. Thereby, the cost for making and maintaining the mold is necessary. Moreover, the process of heating and vulcanization needs more time. Currently, the time for forming a ball core 10 is shorten than that for forming the water ~~wet~~-proof elastic layer 20. Thereby, a waiting time is necessary for enclosing the

water ~~wet~~-proof elastic layer 20 to the ball core 10. However, in this period, the ball core 10 will wet so as to deteriorate the quality of the basket ball so as to affect the use of the basket ball. For example, the basketball easily deforms.

Summary of the Invention

Accordingly, the primary object of the present invention is to provide a water ~~wet~~-proof ball structure, wherein the manufacturing efficiency is increased and cost is reduced. Moreover, once after the ball core is manufactured, the water ~~wet~~-proof elastic bags can enclose the ball core immediately. Thereby, in other manufacturing process, the ball core will not be wetted.

To achieve above objects, the present invention provides a water ~~wet~~-proof ball structure which comprises a ball core; at least two water ~~wet~~-proof elastic bags enclosing the ball core; each water ~~wet~~-proof elastic bag having at least one opening, the openings of the at least two water ~~wet~~-proof elastic bags being not overlapped; and a cover enclosing the at least two water ~~wet~~-proof elastic bags. Each water ~~wet~~-proof elastic bag is made of two sheets, and each sheet has a shape like "8". If the water ~~wet~~-proof elastic bag does not enclose the ball core, the volume of each water ~~wet~~-proof elastic bag is smaller than that of the ball core.

The various objects and advantages of the present invention will be more readily understood from the following detailed description when read in conjunction with the appended drawing.

Brief Description of the Drawings

Fig. 1 is a cross section view of the prior art basket ball.

Fig. 2 is a schematic view showing the process of forming a water ~~wet~~-proof elastic layer out of a ball core by vulcanization in the prior art.

Fig. 3 is an exploded perspective view of the present invention.

Fig. 4 is a structural cross section view of the present invention.

Detailed Description of the Invention

In order that those skilled in the art can further understand the present invention, a description will be described in the following in details. However, these descriptions and the appended drawings are only used to cause those skilled in the art to understand the objects, features, and characteristics of the present invention, but not to be used to confine the scope and spirit of the present invention defined in the appended claims.

With reference to Figs. 3 and 5, the structure of the present invention will be described herein.

Referring to Figs. 3, the present invention includes a ball core 60, at least two water ~~wet~~-proof elastic bags 70 enclosing the ball core 60, and a cover 80 enclosing the at least two water ~~wet~~-proof elastic bags 70.

The ball core 60 is like the prior art one, with reference to Figs. 3 and 4. It is formed by winding a plurality of yarns, such as woolen wires. However, this is not the main concern of the present invention, and thus the details will not be further described here.

The water ~~wet~~-proof elastic bag 70, as shown in Figs. 3 and 4, is a bag body made of elastic rubber material, for example, latex, silica gel. The water ~~wet~~-proof elastic bag 70 has at least one opening 71. If the water ~~wet~~-proof elastic bag 70 does not enclose the ball core 60, the volume of each water ~~wet~~-proof elastic bag 70 is smaller than that of the ball core 60.

The cover 80, as shown in Figs. 3 and 4, is formed by seaming two sheets. Each sheet has a shape like "8". The cover 80 enclosed the two water ~~wet~~-proof elastic bags 70. Since the cover 80 is used in the prior art, the detail will not be further described herein.

By above elements, when the ball core 60 is shaped, the two water ~~wet~~-proof elastic bags 70 tightly enclose the ball core 60 so as to form as an elastic water ~~wet~~-proof elastic layer. In assembly, the openings 71 of the at least two water ~~wet~~-proof elastic bags 70 are not overlapped. Thereby, the ball core 60 is water ~~wet~~-proofed. Then, a yarn layer 90 further encloses the two water ~~wet~~-proof elastic bags 70. A layer of glue is coated upon the yarn layer 90.

It is known from above drawings, since in the present invention, at least two water ~~wet~~-proof elastic bags 70 are used to enclose the ball core 60 and the openings 71 of the at least two water ~~wet~~-proof elastic bags 70 are not overlapped. The ball core 60 is water ~~wet~~-proofed. Moreover, the operation of assembling the water ~~wet~~-proof elastic bags 70 to the ball core 60 is more rapidly than the prior art by heating in mold. Thus, the manufacturing efficiency is increased and cost is reduced. Moreover, once after the ball core 60 is manufactured, the water ~~wet~~-proof elastic bags 70 can enclose the ball core 60 immediately. Thereby, in other manufacturing process, the ball core 60 will not be wetted.

The present invention is thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the present invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

ABSTRACT

A water ~~wet~~-proof ball structure comprises a ball core; at least two water ~~wet~~-proof elastic bags enclosing the ball core; each water ~~wet~~-proof elastic bag having at least one opening, the openings of the at least two water ~~wet~~-proof elastic bags being not overlapped; and a cover enclosing the at least two water ~~wet~~-proof elastic bags. Each water ~~wet~~-proof elastic bag is made of two sheet, each sheet has a shape like “8”. If the water ~~wet~~-proof elastic bag does not enclose the ball core, the volume of each water ~~wet~~-proof elastic bag is smaller than that of the ball core.